






Resource 8: Short list of measures for managed realignment option

The intent of the Managed Realignment option would be to transition the coastline into a new position that is more sustainable with rising sea levels. The short list includes beach nourishment, a rock revetment / armour, rock groynes and cliff slope stabilisation and drainage. These measures are most appropriate for this environment and location to control the rate of cliff erosion.

Measure	Description	Cost (£/metre)
Maintenance – repair and refurbish	This measure would involve maintaining the effectiveness of current defences through a programme of repair and refurbishment, for example, repairing damaged groynes.	1,000-3,000
Beach recycling 	Beach recycling is the mechanical shifting of sand, shingle or even cobbles from an area of accretion to an area of erosion. Normally recycling would be undertaken at a local level, with sediment being taken from an accreting ridge, the lower beach or an estuary bar, and transported a short distance to an eroding foreshore. Alternatively, the source area may be landward if sand is blown onto roads or other areas where it is not wanted and from where it can be recovered. Recycling sand or shingle can be carried out to repair minor erosion problems, or it can be used to rebuild long lengths of upper beach.	15-120
Beach nourishment 	This measure would involve the addition of beach material to this location, helping to provide a wider / higher beach affording greater protection to the cliff toe and the defences at the back of the beach as well as an amenity / recreation benefit. Currently there is a beach in front of Naish Cliff and the placement of material here in sufficient quantities is likely to enhance the level of protection to the cliff. Further to the east, there is less beach material and due to the position of the cliff toe / shoreline / coastal defences relative to the tide levels it is likely more material would need to be placed here to create a beach of substantial size.	350–6,450

Measure	Description	Cost (£/metre)
<p>Rock groynes</p> 	<p>The existing rock groynes in this location could be upgraded to account for changing conditions due to sea level rise / climate change. The existing rock material could be reused to reduce the cost and the structures could also be supplemented with additional rock material if required. Improving the groynes may be important in retaining any additional beach material that is placed here through renourishment.</p>	<p>10,000 – 100,000 each</p>
<p>Revetment/rock armour</p> 	<p>The main defence at the toe of the cliffs at Barton on Sea is a rock revetment. The revetment could be raised to ensure it continues to protect the toe of the cliff with sea level rise. The rock revetment measure could be used separately or in combination with beach nourishment in this location. To the west at Naish Cliff, the rock revetment could be extended to protect the toe of the currently undefended cliffs, although it is unlikely that this will be an economically justifiable solution. Rock armour (high-resistance boulders) at the base of the cliffs may also provide additional toe weighting to reduce the risk of land sliding.</p>	<p>Rock revetment 650–2,850</p> <p>Rock armour 1,350–6,000</p>
<p>Cliff stabilisation and drainage</p> 	<p>Due to the complex nature of the cliffs (weakly consolidated, permeable sands and gravels), any toe defences would need to be used in combination with cliff slope stabilisation and drainage measures in order to minimise the rate of cliff recession. There is an extensive network of drainage already in place in the eastern part of Barton on Sea but the legacy system to the west has failed over time.</p>	<p>5,500 – 11,500</p>